EXHIBIT B

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO. LTD,
SAMSUNG ELECTRONICS AMERICA, INC., and APPLE INC.,
Petitioner,

v.

NEONODE SMARTPHONE LLC,
Patent Owner.

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Before KARA L. SZPONDOWSKI, CHRISTOPHER L. OGDEN, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

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I. INTRODUCTION

Petitioners Samsung Electronics Co. Ltd., Samsung Electronics America, Inc., and Apple Inc. (collectively, "Petitioner") filed a Petition (Paper 6, "Pet.") for *inter partes* review of claims 1–6 and 12–17 of U.S. Patent No. 8,095,879 B2 (Ex. 1001, "the '879 patent"). The Board initially denied the Petition (Paper 24, "Dec."). However, after Petitioner filed a Request for Rehearing (Paper 25, "Reh'g Req."), the Board reconsidered its position and granted *inter partes* review. (Paper 26, "Reh'g Dec."). The parties later agreed, by stipulation, to limit the scope of the Petition to four grounds challenging claims 1–6 and 12–17. Paper 50.

Patent Owner Neonode Smartphone LLC ("Neonode") filed a Patent Owner Response under seal (Paper 37, "PO Resp."; public redacted version as Ex. 1048), Petitioner filed a Reply to the Patent Owner Response (Paper 41, "Pet. Reply"), and Neonode filed a Sur-reply under seal (Paper 49, "PO Sur-reply"; public redacted version as Ex. 1073).

We held an oral hearing on Sept. 6, 2022, and the transcript is entered on the record. Paper 55 ("Tr.").

This is a final written decision under 35 U.S.C. § 318(a) as to whether the claims challenged in the *inter partes* review are unpatentable. For the reasons below, we conclude that Petitioner has not shown that any claims of the '879 patent are unpatentable.

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II. BACKGROUND

A.   RELATED PROCEEDINGS

The parties identify the following as related matters: *Neonode Smartphone LLC v. Apple Inc.*, No. 6:20-cv-00505 (W.D. Tex. filed June 8, 2020); and *Neonode Smartphone LLC v. Samsung Electronics Co. Ltd.*, No. 6:20-cv-00507 (W.D. Tex. filed June 8, 2020). Pet. 92–93; Paper 7, 2.

B.   THE '879 PATENT (EX. 1001)

The '879 patent relates to a user interface on a mobile handheld computer device that has a touch-sensitive display screen divided into a menu area and a display area. *See* Ex. 1001, 1:6–9, code (57). The user interface is "specifically adapted to be used with a small computer unit where the size of the touch sensitive area is in the order of 2–3 inches" and the interface can "be operated by one hand." *Id.* at 3:1–6.

Figure 1 of the '879 patent, reproduced below, illustrates such a user interface:
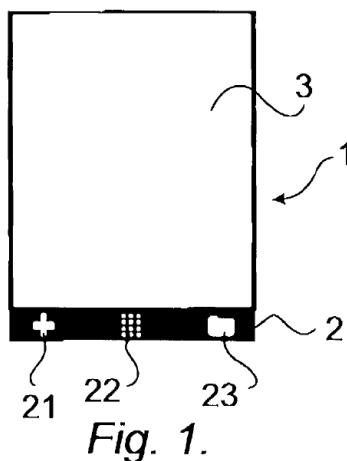

Fig. 1.

Figure 1 depicts touch-sensitive area 1 on a mobile handheld device. Ex. 1001, 3:22–23, 3:51–53. It is divided into menu area 2 and display area

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3. *Id.* at 3:53–54. Menu area 2 is a narrow strip along the lower part of touch-sensitive area 1 that contains predefined functions 21 (a general application-dependent function), 22 (a keyboard), and 23 (a task and file manager). *Id.* at 4:1–6; *see also id.* at 2:7–10.

Functions 21, 22, and 23 in menu area 2 "can be activated when the touch sensitive area detects a movement of an object with its starting point within the representation of the function on the menu area and with a direction from the menu area to the display area." *Id.* at 1:65–2:5, 2:11–14. This method of activation is shown in Figure 2, reproduced below:
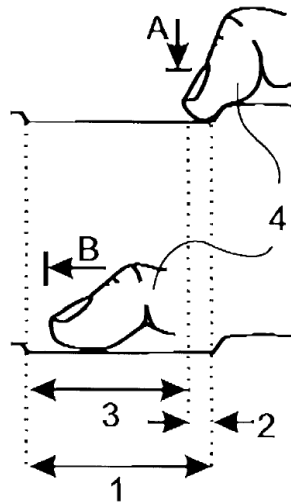

Fig. 2.

Figure 2, above, illustrates a touch gesture by which a user may activate functions 21, 22, or 23 in area 2. *See* Ex. 1001, 3:24–25. This gesture begins when object 4 (a thumb as shown in Figure 2, but it could be any finger, a pen, or another pointing device, *id.* at 6:11–15) touches the display at point A within representation 21, 22, or 23, and moves in direction B away from menu area 2 into display area 3. *Id.* at 4:7–11.

When a user activates the first function, display area 3 displays icons representing services or settings, depending on the current active application.

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Id. at 2:18–20. Figure 3, reproduced below, illustrates the touch screen after function 21 has been activated:

Fig. 3.
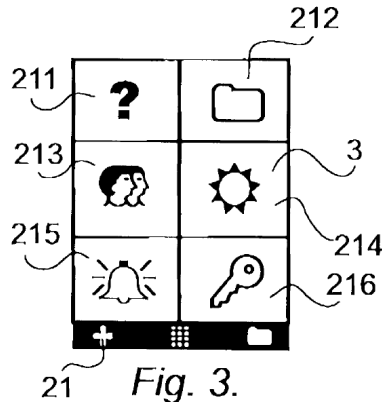
Ex. 1001, 3:26. Figure 3, above, shows that after a user activates function 21 with the gesture as illustrated in Figure 2, display area 3 displays icons 211–216, which each represent services or functions depending on the currently active application. *Id.* at 4:12–15. If, for example, the active application handles a picture, then the icons showing on display area 3 after a user activates the first function can include services such as "save to disk," "send as SMS," or "delete," or settings such as "resolution," "colour," or "brightness." *Id.* at 4:24–28.

Analogously, selecting function 22 activates a keyboard, and selecting function 23 activates a library of available applications and files on the device. *Id.* at 4:36–38, 4:63–65, Figs. 5–6. If there is no currently active application, the icons may "represent services or settings of the operations system of the computer unit, such as background picture, clock alarm 215, users 213, help 211, etc." *Id.* at 4:29–32.

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C.   CHALLENGED CLAIMS AND GROUNDS

Claim 1, the only independent claim, is as follows:

1. A non-transitory computer readable medium storing a computer program with computer program code, which, when read by a mobile handheld computer unit, allows the computer to present a user interface for the mobile handheld computer unit, the user interface comprising:

[a]   a touch sensitive area in which a representation of a function is provided,

[b]   wherein the representation consists of only one option for activating the function

[c]   and wherein the function is activated by a multi-step operation comprising (i) an object touching the touch sensitive area at a location where the representation is provided and then (ii) the object gliding along the touch sensitive area away from the touched location,

[d]   wherein the representation of the function is not relocated or duplicated during the gliding.

Ex. 1001, 6:45–59 (Petitioner's reference letters added).

Petitioner initially argued ten grounds for *inter partes* review, as shown in the following table:

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Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 14–17	103(a)[1]	Ren,[2] Tanaka[3]
2–5	103(a)	Ren, Tanaka, Hirayama307[4]
3	103(a)	Ren, Tanaka, Hirayama307 Hirayama878[5]
6, 13	103(a)	Ren, Tanaka, Allard[6]
12	103(a)	Ren, Tanaka, Henckel[7]
1, 2, 4, 5, 14–17	103(a)	Hirayama307, Ren
3	103(a)	Hirayama307, Ren, Hirayama878
6, 13	103(a)	Hirayama307, Ren, Allard
12	103(a)	Hirayama307, Henckel
1, 14, 15	103(a)	Jermyn[8]

Pet. 1–2.

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[1] 35 U.S.C. § 103(a) (2006), *amended by* Leahy–Smith America Invents Act, Pub. L. No. 112-29 § 103, sec. (n)(1), 125 Stat. 284, 287, 293 (2011) (effective Mar. 16, 2013). The '879 patent issued from an application filed on December 10, 2002, which is before the effective date of this amendment to section 103. *See* Ex. 1001, code (22).

[2] Xiangshi Ren & Shinji Moriya, *Improving Selection Performance on Pen-Based Systems: A Study of Pen-Based Interaction for Selection Tasks*, 7 ACM Transactions on Computer-Human Interaction, Sept. 2000, at 384 (Ex. 1004).

[3] Tanaka, US 5,249,296, issued Sept. 28, 1993 (Ex. 1005).

[4] Hirayama et al., US 5,406,307, issued Apr. 11, 1995 (Ex. 1006) (Hirayama307").

[5] Hirayama, US 6,100,878, issued Aug. 8, 2000 (Ex. 1009) ("Hirayama878").

[6] Allard et al., US 5,615,384, issued Mar. 25, 1997 (Ex. 1010).

[7] Henckel et al., US 5,463,725, issued Oct. 31, 1995 (Ex. 1013).

[8] Ian Jermyn et al., *The Design & Analysis of Graphical Passwords*, in Proceedings of the 8th USENIX Security Symposium (1999) (Ex. 1014).

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With our authorization (Ex. 2037), the parties later stipulated to limit the scope of the Petition to the sixth through ninth grounds based on Hirayama307. Paper 50; *see also* Reh'g Req. 1 n.1; PO Resp. 1 n.1.

D.   DECLARATORY TESTIMONY

Petitioner submits two declarations of Dr. Benjamin B. Bederson as expert testimony. Exs. 1002, 1051; *see also* Ex. 1002, App'x A (curriculum vitae). Petitioner also relies on a declaration of Jacob Robert Munford as to Ren's public availability. Ex. 1031.

Neonode submits a declaration of Dr. Craig Rosenberg. Ex. 2007; *see also* Ex. 2002 (curriculum vitae). Neonode also submits declarations of Ulf Mårtensson (Ex. 2022), Joseph Shain (Ex. 2023), Marcus Bäcklund (Ex. 2024), and Per Bystedt (Ex. 2026 under seal; redacted public version as Ex. 1049) relating to alleged objective indicia of non-obviousness and the early development of touch-screen phones that, according to Neonode, embody the challenged claims.

III. GROUNDS OF THE PETITION

For the reasons below, we determine that Petitioner has not shown, by a preponderance of the evidence, that claims 1–6 and 12–17 of the '879 patent are unpatentable under the extant grounds of the Petition. Before analyzing these grounds in detail, we address two matters that will underlie our analysis: the level of ordinary skill in the art and the construction we will apply to the claim terms.

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A.   LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim would have been obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical "person of ordinary skill in the art," from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct "presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan." *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

For Petitioner, Dr. Bederson testifies that a person of ordinary skill "would have had at least a bachelor's degree in computer science, computer engineering, or the equivalent education and at least two years of experience in user-interface design and development," but "[a]dditional years of experience could substitute for formal education, and vice versa." Ex. 1002 ¶ 49.

Testifying for Neonode, Dr. Rosenberg states that for his declaration, he "will apply the same definition of the level of skill of a [person of ordinary skill in the art]" as Dr. Bederson. Ex. 2007 ¶ 28.

We find Dr. Bederson's uncontested articulation to be reasonable in light of the subject matter involved in the '879 patent and the asserted prior art. *See, e.g.*, Ex. 1001, 1:49–61 (stating that the '879 patent addresses

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technical problems including "to provide a user-friendly interface . . . on a small handheld computer unit"). Thus, we adopt it for our decision.

B.   CLAIM CONSTRUCTION

In an *inter partes* review, we construe a patent claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2020). This generally includes "construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.* The ordinary and customary meaning of a claim term "is its meaning to the ordinary artisan after reading the entire patent," and "as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313, 1321. There are only two circumstances in which a construction departs from the ordinary and customary meaning: "1) when a patentee sets out a definition and acts as [their] own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Any such special meaning of a term "must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention." *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

To construe the claim terms, "we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006).

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Petitioner does not propose any explicit claim constructions in its
Petition. *See* Pet. 5–6. Neonode does not propose any explicit constructions
either, but in its Response, Neonode raises a number of claim construction
arguments to distinguish the term *gliding* as it appears in limitation 1c from
a "drag-and-drop" operation as known in the prior art, to which Petitioner
responds in its Reply. *See* PO Resp. 19–33; Pet. Reply 1–9; *see also* PO Sur-
reply 7–15. We do not need to construe this term explicitly for our decision,
and to the extent any terms need construction, we address the terms below in
the context of the prior art. *See Nidec Motor Corp. v. Zhongshan Broad
Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only
construe terms 'that are in controversy, and only to the extent necessary to
resolve the controversy' . . . ." (quoting *Vivid Techs., Inc. v. Am. Sci & Eng'g,
Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C.   CHALLENGE TO CLAIM 1

In the first extant ground of the Petition, Petitioner argues that claims
1, 2, 4, 5, and 14–17 are unpatentable under 35 U.S.C. § 103(a) as obvious
over Hirayama307 in view of Ren. Pet. 49–70. For this ground, we focus on
Petitioner's challenge to sole independent claim 1 and particularly limitation
1d (Pet. 60–62), after which we address the remaining claims and the
remaining grounds.

A claim is unpatentable under § 103(a) for obviousness if the
differences between the claimed subject matter and the prior art are "such
that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said
subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406

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(2007). When a ground in a petition is based on a combination of references, we consider "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *Id.* at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We base our obviousness inquiry on factual considerations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

Considering these factors, we determine that Petitioner has not shown, by a preponderance of the evidence, that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Hirayama307 in view of Ren. We begin with an overview of Hirayama307 and Ren.

1. *Hirayama307*

Hirayama307 relates to a small data electronic device comprising a pen, a display panel, and a transparent touch sensor mounted on the device. Ex. 1006, 1:7–10, 2:64–3:6. A user interface shown on the display panel of this device is shown in Figure 3A, reproduced below:

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FIG. 3A
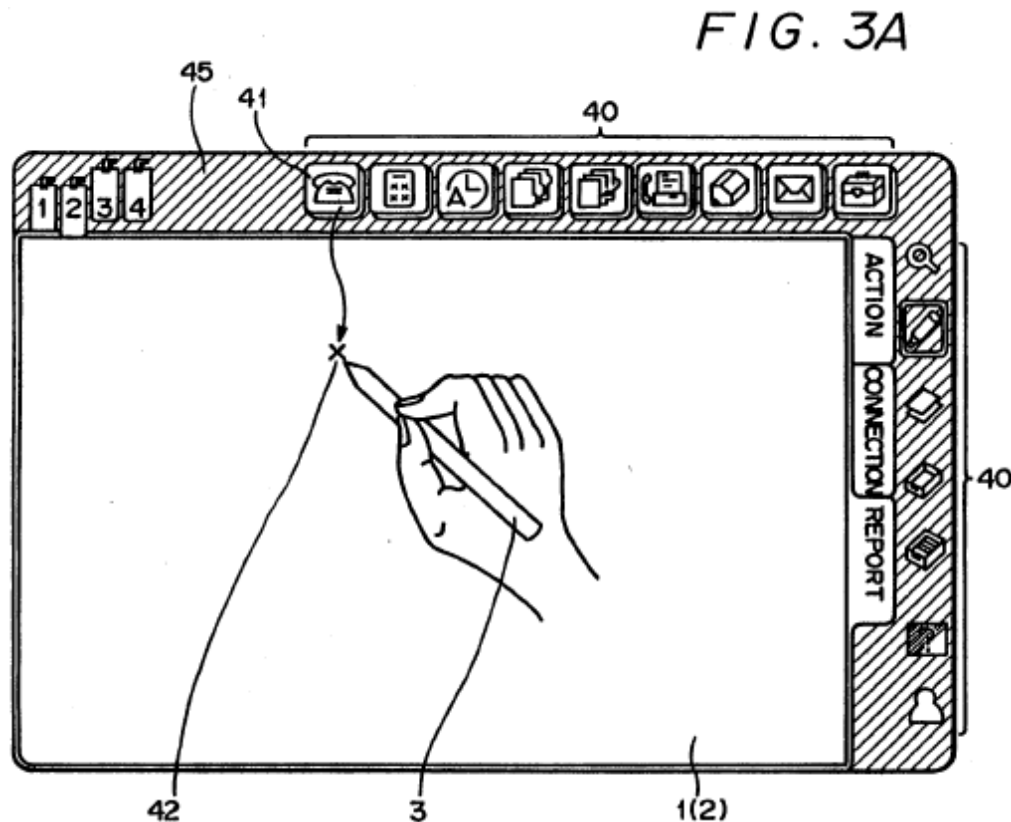
Ex. 1006, 2:48–51. Figure 3A, shown above, illustrates how a user selects and activates, via touch-sensor (input tablet) 2, a telephone dialer operation on the display portion 1 of the device. *See* Ex. 1006, 4:61–63. The user first touches telephone icon 41 (having a picture of a telephone to represent a dialer operation) with the point of pen 3. *Id.* at 4:63–65. As the point of pen 3 approaches the surface of input sensor 2 on the way towards touching icon 41, *x*-shaped cursor 42 appears on the screen of display portion 1 so the user "can visually confirm the exact position of the point of pen 3 on the input tablet 2 very clearly." *Id.* at 4:65–5:3.

After the user touches dialer icon 41 with the point of pen 3, "the user moves (i.e. drags) the point of the pen 3 to the display position on the surface of the input tablet 2 without being separated therefrom." Ex. 1006, 5:3–6. At some point during this pen movement, "an icon [43] (hereinafter

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. . . referred to as a window) enlarged in the form of the processing display mode of the desired icon 41 is automatically displayed on the display portion 1 as shown in FIG. 3B." *Id.* at 5:9–12.

Figure 4A, reproduced below, is a flowchart of what happens during this process:

FIG. 4A
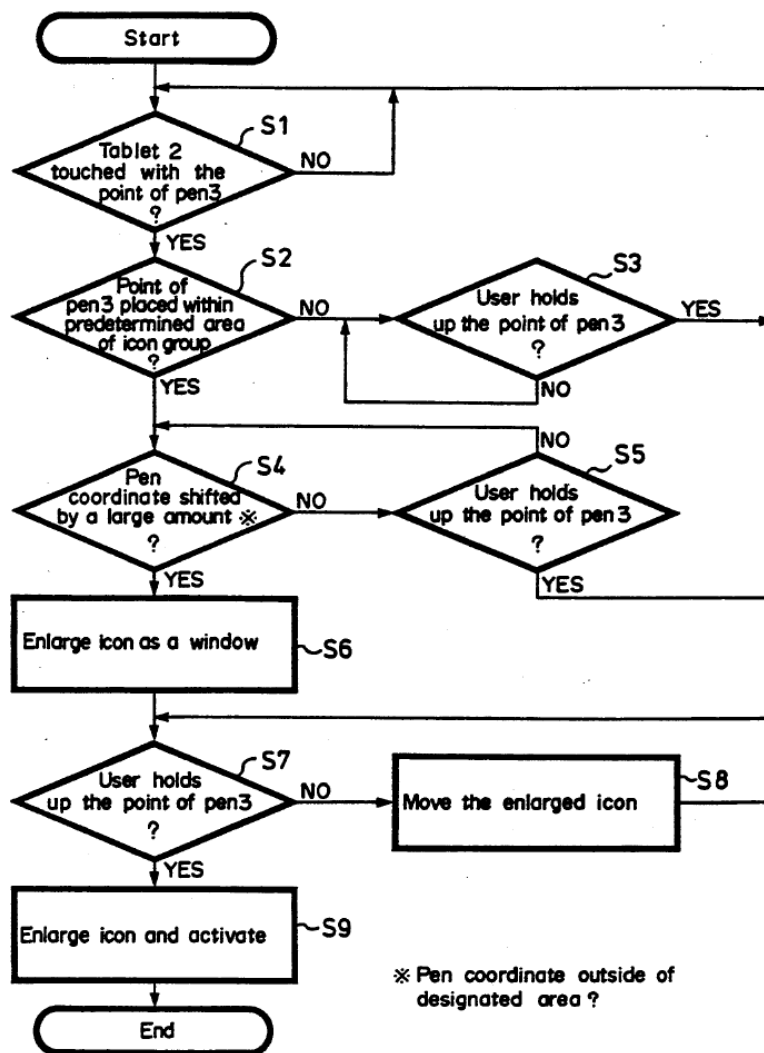
The flowchart in Figure 4A, above, begins when a processor loops until the point of pen 3 is touching the surface of input tablet 2 within a predetermined area of icon group 40 and until the point of pen 3 has, before

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the user lifts the pen from the surface, either (a) shifted by a "large" reference amount or (b) moved outside a designated area such as hatched area 45 (steps S1–S5). Ex. 1006, 5:16–63. If one of these things occurs, then in step S6, "icon 41 . . . is enlarged as a window 43 shown in FIG. 3B." *Id.* at 5:59–66.[9] Then, the processor continues to move enlarged icon/window 43 along with the tip of pen 3 until the user lifts pen 3 from the surface, at which time "the icon is activated so that various processing menus within the window 43 can be executed" (steps S7–S9). *Id.* at 6:3–21.

Figure 3B, reproduced below, depicts among other things the continued dragging of enlarged icon/window 43 along with pen 3 prior to the dialer application being activated:

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[9] Elsewhere, Hirayama also suggests an embodiment in which this enlargement of icon 41 to window 43 does not occur until the user "takes the point of the pen 3 off from the surface of the input tablet 2." Ex. 1006, 5:3–9; *see also id.* at 2:10–13 ("[A] circuit converts the icon into a window when it is detected that the point of the pen is apart from the display device . . . .").
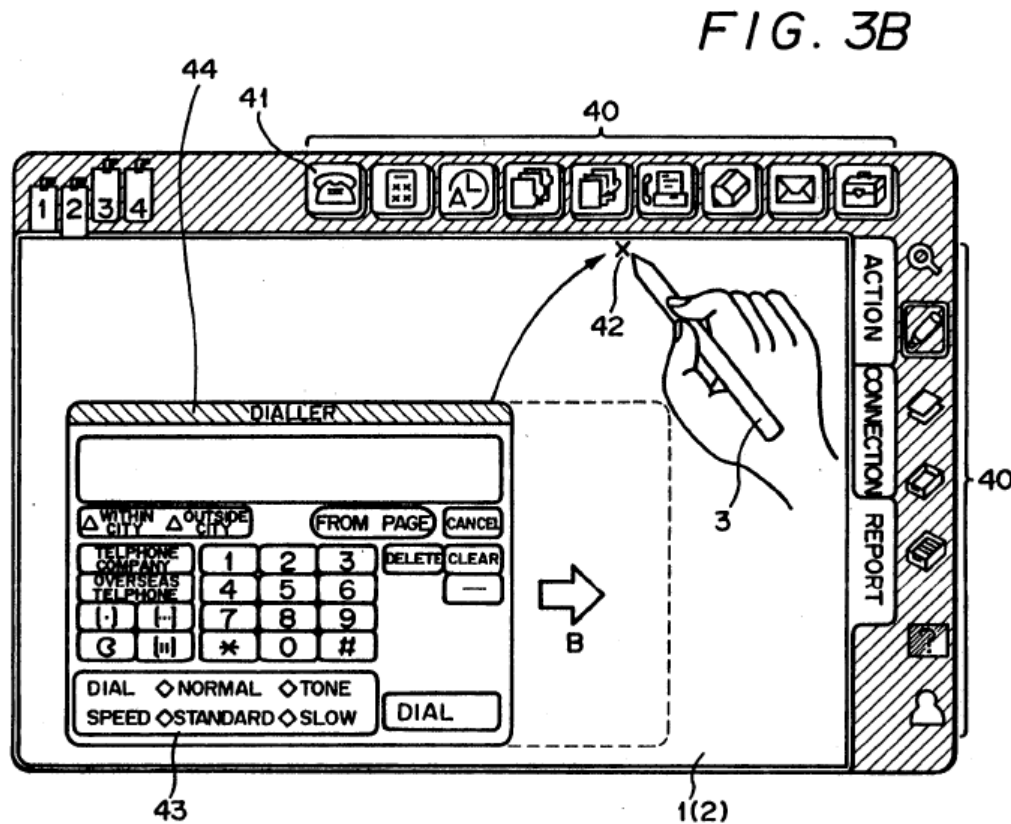
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FIG. 3B

Figure 3B, above, illustrates later stages of the same user interface as Figure 3A. *See* Ex. 1006, 2:48–51, 5:3–12. In the above illustration, arrow B depicts the movement of window 43 as "the user moves the point of the pen 3 in the arrow B direction and drags the pen 3 to the position shown by the broken line," thus causing "the large display icon, i.e. the window 43 [to be] moved to the position shown by the broken line in FIG. 3B." *Id.* at 6:10–14.

Hirayama307 also describes a reverse operation in which the user can "bring the large icon, i.e. the window 43 displayed on the display portion 1 as shown in FIG. 3B back to the original position." Ex. 1006, 6:22–24. To do this, the user touches hatched portion 44 of window 43 and "drags the point of the pen 3 back to the telephone icon 41 of the original icon group 40 without being apart from the tablet," or alternatively, the user may return icon/window 43 to a different "predetermined icon in the icon group 40" and

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then "the window can automatically be stored in the vacant icon position."
Id. at 6:24–35.

In what appears to be another embodiment for returning the dialer icon to icon group 40, icon/window 43 is "reduced in size" to icon 41 if the user drags the pen either (a) by a "large" amount or (b) outside a designated area, after which "the icon displayed as the reduced icon [41] is moved" until "the user holds the pen 3 up from the panel surface of the input tablet 2," after which "the icon is deactivated" and "moved to the predetermined vacant position." *Id.* at 6:66–7:6, Fig. 4B.

2.   Ren

Ren is a journal article comparing different pen-based selection strategies for use on small, touch-sensitive screens. Ex. 1006, 384–85. One of these strategies, called *Slide Off*, has a variation reproduced below in an extracted portion of Figure 3:

$$a \rightarrow c \rightarrow b \rightarrow a$$
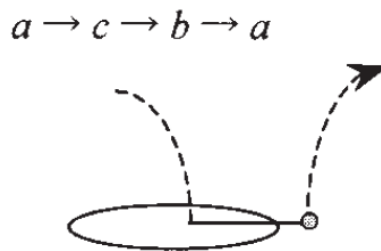
Ex. 1006, 390. In Figure 3 above, "[t]he arrows show the direction of pen-tip movement," "the dashed lines indicate that the pen-tip is not in contact with the screen surface (either before or after contact), and the solid lines . . . show that the pen-tip is in contact with the screen surface." *Id.* at 389. An ellipse represents the target. *See id.* at 387 & Fig. 1.

This variation of the *Slide Off* strategy, described as "$a \rightarrow c \rightarrow b \rightarrow a$," is where the pen touches a target ($a \rightarrow c$), slides off the target ($c \rightarrow a$), and then

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lifts off the screen outside the target (*b→a*). *See id.* at 390, Fig. 3. "The target is highlighted only while the pen is in contact with it" and "the selection is made when the pen is removed from any point on the screen . . . outside the target area." *Id.* at 391.

3. Preamble and Limitations 1a–1c

Petitioner argues that Hirayama307 alone discloses the preamble of claim 1 and limitations 1a–1c. Pet. 49–60. The preamble recites "[a] non-transitory computer readable medium storing a computer program with computer program code, which, when read by a mobile handheld computer unit, allows the computer to present a user interface for the mobile handheld computer unit, the user interface." Ex. 1001, 6:45–49. To the extent that the preamble is limiting, which Petitioner does not take a position on, Petitioner contends that Hirayama307 discloses such a medium. Pet. 49–51.

Limitations 1a and 1b recite "a touch sensitive area in which a representation of a function is provided, wherein the representation consists of only one option for activating the function." Ex. 1001, 6:50–52. Petitioner contends that this "representation of a function" corresponds to Hirayama307's icon 41 as shown in Hirayama307's Figures 3A and 3B, which represents a single option for activating a phone dialer function. Pet. 51–58; *see supra* Section III.C.1.

Limitation 1c recites "wherein the function is activated by a multi-step operation comprising (i) an object touching the touch sensitive area at a location where the representation [of a function] is provided and then (ii) the object gliding along the touch sensitive area away from the touched location." *Id.* at 6:54–57. An example of this operation is the gesture illustrated in Figure 2 of the '879 patent, which we discuss above. *See supra*

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Section II.B. Petitioner contends that in Hirayama307, this recited gesture corresponds to the user touching icon 41 on display portion 1 and moving the pen downward, away from the touched location, until the function is activated by opening up dialer window 43 (as shown in Hirayama307's Figure 3B). *See* Pet. 58–60.

Neonode does not contest Petitioner's arguments about the preamble or limitations 1a or 1b, but contests Petitioner's arguments as to limitation 1c. PO Resp. 19–33. However, because we find that Petitioner has failed to meet its burden of persuasion as to limitation 1d, particularly in light of our determination that the objective indicia of non-obviousness weigh in favor of nonobviousness (*see infra* Section III.C.5), we need not address Petitioner's contentions as to the preamble or limitations 1a–1c in detail, or Neonode's responsive arguments about limitation 1c. We discuss the contested issues relating to limitation 1d below.

4.   Limitation 1d

Limitation 1d recites "wherein the representation of the function is not relocated or duplicated during the gliding." Ex. 1001, 6:57–59. Petitioner argues, alternatively, (1) that Hirayama307 would have suggested limitation 1d to a person of ordinary skill in the art, and (2) that Hirayama307 teaches the limitation in view of the teachings of Ren. Pet. 60–62. We address each of these arguments in turn.

(a)   Whether Hirayama307 Teaches Limitation 1d

Limitation 1d is a negative limitation because it requires the *absence* of any "relocat[ion] or duplicat[ion] during the gliding" gesture. Ex. 1001, 6:57–59. As with any claim limitation, the burden of persuasion rests on

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Petitioner to show that the negative limitation is present in Hirayama307 or that this negative limitation would have been an obvious variation based on Hirayama307's disclosure, a burden that never shifts to Neonode. *Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1379–81 (Fed. Cir. 2015).

As discussed above, Petitioner contends that Hirayama307's icon 41 is the "representation of the function" recited in claim 1, and that the recited gliding gesture occurs when "the user 'moves (*i.e.* drags) the point of the pen 3.'" Pet. 60 (quoting Ex. 1006, 5:3–4) (citing Ex. 1006, 1:52–55); *see supra* Section III.C.3. According to Petitioner, "[i]t would have been obvious, given Hirayama307's disclosure[,] to implement the user interface such that the icon is not relocated or duplicated during the gliding of the pen." Pet. 60 (citing Ex. 1002 ¶ 157). In support for its arguments, Petitioner relies on the testimony of Dr. Bederson and focuses primarily on Figures 3A and 3B, and text associated with these figures. *See* Pet. 60–62; Pet. Reply 10–18, 21–26.

Below, we address the disputed issues regarding Petitioner's argument. For the reasons below, we find that the evidence is insufficient to establish by a preponderance of the evidence that Hirayama307 teaches the lack of any relocation or duplication of icon 41 during the pen movement as limitation 1d requires.

(1) *Hirayama307's Summary of the Invention*

In response to Petitioner's general arguments in the Petition, Neonode argues that Hirayama307's "Objects and Summary of the Invention" section discloses that after a user selects an icon such as icon 41 in Figure 3A, the input device 2 has a circuit that "controls the icon display coordinate position such that the icon display coordinate position is moved in

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accordance with the movement of the position coordinate of the point of the pen" and then after some distance "converts the icon into a window." PO Resp. 39–40 (quoting Ex. 1006, 2:5–11) (citing Ex. 2007 ¶ 73). This, according to Neonode, suggests that icon 41 is dragged along with the tip of pen 3 during the dragging operation that Petitioner relies on as disclosing limitation 1d. *See id.* at 29.

In its Reply, Petitioner acknowledges that "it would have been at least obvious" to implement Hirayama307's user interface in "a way in which icon 41 is dragged during gliding of the pen," but Hiryama307 also teaches implementing the user interface in "a way that does not drag icon 41." Pet. Reply 18 (citing Ex. 1051 ¶ 82). Petitioner also contends that Hirayama307's summary section describes a different embodiment than the rest of the disclosure. *See id.* at 10–12 (citing Ex. 1006, 2:5–13, 4:61–65, 5:3–12, 5:26–44, 5:63–66, Figs. 3A, 3B, 4A; Ex. 2007 ¶ 59; Ex. 1051 ¶¶ 61–64); *id.* at 17–18 (citing Ex. 1006, 1:64, 7:49–56, Fig. 3A; Ex. 1051 ¶¶ 80–81).

In its Sur-reply, Neonode disagrees that the summary section of Hirayama307 reflects a different embodiment from the rest of the disclosure, as its intent was to provide a summary "of the invention." PO Sur-reply 24 (emphasis omitted). Neonode argues that the summary refers to different "aspects" of that invention only because it summarizes both icon-opening and icon-closing operations. *Id.*

We agree with the parties that a person of ordinary skill in the art, reading Hirayama307 and in particular its summary section, would have understood that icon 41 can move along with the tip of pen 3 during the dragging operation. However, the language in the summary section adds

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ambiguity by referring to movement of "the icon display coordinate position" rather than simply the "icon." Ex. 1006, 2:6; *see* Ex. 1051 ¶ 81 (implying that there is a distinction between moving an icon and moving the icon's "display coordinate position").

So, while the summary passage teaches dragging an icon's "display coordinate position," this passage does not necessarily teach that the icon is visually dragged with the pen. And we acknowledge Petitioner's point that this disclosure would not rule out other embodiments in Hirayama307 (to the extent they exist) in which the icon is not moved during the dragging gesture. Pet. Reply 17–18. Nevertheless, the passage provides at least some evidence that a person of ordinary skill in the art would have understood that the icon is visually dragged with the pen in Hirayama307's disclosure, and Dr. Rosenberg's testimony on this point is entitled to at least some weight in our § 103 analysis. Ex. 2007 ¶¶ 72–73.

(2)   *Figure 4A*

In its Reply, Petitioner argues that we can interpret Figure 4A and its associated text as disclosing, or at least rendering obvious, that icon 41 is not dragged along with pen 3. Pet. Reply 10–15. In particular, Petitioner argues that "[d]uring the shifting/gliding of the pen in step S4 [of Figure 4A] there is no movement or dragging of icon 41." Pet. Reply 12 (citing Ex. 1006, 6:3–6, 6:16–21, Figs. 4A, 3B; Ex. 1051 ¶¶ 63–64). Petitioner relies on Dr. Bederson's testimony that "[n]either the flowchart of FIG. 4A nor the corresponding description tell a [person of ordinary skill in the art] to relocate, duplicate, or otherwise drag icon 41 during the movement of the pen," yet Figure 4A expressly "teaches when to move/drag the window 43 . . ., which is not a relocation or duplication of icon 41." *Id.* (citing

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Ex. 1006, 6:7–14, Fig. 4A; Ex. 1053, 94:10–95:12). According to Petitioner, a person of ordinary skill in the art would have been left "to assume that where no such movement is described, none should be implemented." *Id.* (citing Ex. 1051 ¶ 65).

Instead, Petitioner argues that in Hirayama307's Figure 4A, although a user moves the pen from its original touch point at icon 41, the icon stays at its original location while the interface shows only cursor 42 at the location of the pen tip until the pen tip either leaves hatched area 45 or shifts some greater distance from that original position, at which time window 43 will appear at the location of the pen tip. *See* Pet. Reply 13–15 (citing Ex. 1006, 5:41–53, 5:61–63, Fig. 4A; Ex. 1051 ¶¶ 66–69).

We find Petitioner's argument as to the flowchart in Figure 4A and the accompanying textual description unpersuasive. First, Petitioner has not pointed to any explicit disclosure of limitation 1d in Hirayama307's Figure 4A or elsewhere within Hirayama307. At best, Petitioner shows that in Figure 4A there is "[n]o discussion of movement of icon 41." Pet. Reply 11 (emphasis omitted); *see also id.* at 15 (arguing that "nothing about [step S4 in Figure 4A] instructs a [person of ordinary skill in the art] that icon 41 is dragged during movement of the pen").

And we find that Petitioner has not shown, by a preponderance of the evidence, that the absence in Figure 4A of any step of moving icon 41 would have suggested to a person of ordinary skill in the art that no such movement or duplication of icon 41 occurs. We acknowledge Dr. Bederson's point that Figure 4A omits any explicit reference to moving icon 41 prior to its enlargement to icon/window 43, while at the same time explicitly mentioning the movement of enlarged icon/window 43. *See* Ex. 1051 ¶ 65.

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But Dr. Bederson does not factually support his inference, from this, that a person of ordinary skill in the art would have interpreted that omission as a teaching *not* to drag icon 41. Ex. 1051 ¶ 65.

(3)   Curved Arrows in Figures 3A and 3B

Petitioner contends that Hirayama307's Figure 3A is evidence that icon 41 is not dragged with pen 3 because the curved arrow from icon 41 to the location of pen 3 depicts a gliding gesture without showing a relocated or duplicated icon 41. *See* Pet. 60–61 (citing Ex. 1006, 4:66–5:3, Fig. 3A; Ex. 1002 ¶ 158).

In response, Neonode argues that Petitioner misinterprets Figure 3A as showing the state of a pen tip *after* the user has selected icon 41. PO Resp. 43–45 (citing Ex. 2007 ¶¶ 80–81). According to Dr. Rosenberg, a person of ordinary skill in the art "would understand that Fig. 3A represents the state of the device *before* icon 41 is being dragged" because Hirayama307 discloses that icon 41 is "enlarged as a window 43 as shown in Fig. 3B" as soon as the pen tip "is considerably shifted" from its original touch location or leaves hatched area 45. *Id.* (quoting Ex. 1006, 5:60, 5:65–66) (citing Ex. 1006, 5:59–66). He points out that "[i]n Fig. 3A, . . . the tip of the pen is both outside of the hatched area, and has considerably shifted as it is well into the active screen area, *but* there is no enlarged window." *Id.* (citing Ex. 1006, 5:59–66).

Thus, according to Dr. Rosenberg, a person of ordinary skill in the art would have understood "that if Fig. 3A was intended to show the state of the screen during a drag-and-drop operation, then it should have also shown an enlarged window 43. Instead, Fig. 3A only shows 'a cross-shaped position designating cursor 42,'" which would be consistent with Hirayama307's

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disclosure that cursor 42 is shown "'as the point of the pen 3 approaches the panel surface of the display portion 1'—*i.e.*, before the pen has selected the icon 41 to initiate the process of drag-and-drop." PO Resp. 44 (quoting Ex. 1006, 4:65–68); *see also* Ex. 2007 ¶ 81 (opining that a person of ordinary skill in the art would have understood Figure 3A to refer to the state of the system after power-on and before selecting icon 41) (citing Ex. 1006, 4:58–61); Pet. 43–45.

In its Reply, Petitioner argues that "[t]he only reason to show the curved arrow in FIG. 3A is to illustrate the movement of the pen described in the corresponding text." Pet. Reply 15–16 (citing Ex. 1006, 4:61–5:7; Ex. 1051 ¶¶ 70–74); *see also* Pet. 60 (citing Ex. 1006, 1:52–55, 5:3–4, 7:10; Ex. 1002 ¶ 157).

Although we agree with Petitioner that the curved arrow in Hirayama307's Figure 3A appears to depict a dragging operation that occurs after selecting icon 41 (Pet. Reply 15), we also credit Dr. Rosenberg's testimony that Figure 3A depicts, in the same figure, the state of the user interface immediately after power-on and before selecting icon 41 (Ex. 2007 ¶ 81). This is clear from the text accompanying Figure 3A. Ex. 1006, 4:58–61 ("when the power switch 10 shown in FIG. 1 is depressed, icon groups 40 which make various processings possible are displayed on the display portion 1 as shown in FIG. 3A"). Because Figure 3A simultaneously depicts the state of the user interface at two distinct time periods (immediately after power-on and during a dragging operation), the fact that icon 41 appears at its original location rather than at the pen location does not necessarily mean that icon 41 is stationary while pen 3 is being dragged across the surface of the device, or that a duplication of icon 41 is not being dragged along with

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the pen. An equally plausible interpretation is that the figure is simply depicting the dragging operation in less detail than the state of the user interface at power-on.

We also find persuasive Neonode's argument, and credit Dr. Rosenberg's testimony, that the arrow in Figure 3A reflects a large distance from the original location of icon 41 within icon group 40, and Hirayama307 suggests that, at this stage in the dragging operation, enlarged icon/window 43 should be visible but that's not what is depicted in Figure 3A. *See* PO Resp. 43; PO Sur-reply 25; Ex. 2007 ¶ 80. This suggests that Hirayama307 is merely omitting any representation of what is being dragged at the location of cursor 42.

Moreover, we note that Figure 3B likewise shows a curved arrow and a bare cursor for the reverse operation of reducing icon/window 43 and returning it to icon group 40, yet Hirayama307 explicitly discloses that during at least the latter part of this reverse operation, "the icon displayed as the reduced icon [41] is moved" with the tip of pen 3. Ex. 1006, 6:66–67, Fig. 4B step ST8. In other words, even though pen 3 has moved a significant distance toward icon group 40, Figure 3B does not depict the dragging of icon 41 at this point as Hirayama307's disclosure would suggest, thus further evincing that Figures 3A and 3B do not depict the dragging operations in full detail.

Thus, because of the unclarity of what is depicted in Figures 3A and 3B, Petitioner has not made a persuasive showing that the presence of curved arrows in Figure 3A, without an explicit depiction of a dragged icon, would have suggested limitation 1d to a person of ordinary skill in the art.

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> **(4)** *Presence of Icon 41 at Original Location in
> Figures 3A and 3B*

Petitioner contends that in Figures 3A and 3B, icon 41 is in its original
location within icon group 40, even though Figure 3B also shows window
43, suggesting that icon 41 will remain "in the same location it started at the
beginning of the dragging operation." *See* Pet. 62 (citing Ex. 1002 ¶ 159);
see also Pet. Reply 12.

In response, Neonode contends, as we discuss above, that Figure 3A
depicts icon 41 in its original location simply because that is where icon 41
is when device is powered on. *See* PO Resp. 43–45. Neonode also argues
that the presence of icon 41 in Figure 3B "at most shows that the icon was
duplicated (not relocated), which still does not disclose the claims that
require neither relocation nor duplication." PO Sur-reply 25; *see also* PO
Reply 45 n.8.

Relying on the testimony of Dr. Rosenberg, Neonode also provides an
interpretation of Figures 3A and 3B that, Neonode contends, is clear from
the textual disclosure. PO Resp. 35–40. According to Neonode, after the user
touches the pen tip to icon 41, the icon moves some distance along with the
tip of pen 3, at least until the pen tip leaves hatched area 45, after which icon
41 becomes enlarged into icon/window 43, which also moves along with the
tip of pen 3 until its final location where the user lifts the pen away from the
screen surface. PO Resp. 36–40 (citing Ex. 1006, 2:1–13, 5:30–32, 5:39–53,
5:59–66, Fig. 3A; Ex. 2007 ¶¶ 71–73).

Dr. Rosenberg also testifies that Hirayama307 "routinely states that
the application window 43 is created by 'enlarging' the dragged application
icon 41," and "[i]f the icon 41 did not move with the movement of the pen to

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then be 'enlarged' or 'converted' into window 43, Hirayama-307 would have referred to the process as 'creating' or 'opening' a window." Ex. 2007 ¶ 78; PO Resp. 42.

Dr. Rosenberg provides a modified version of Hirayama307's Figure 3A, reproduced below, to illustrate the alleged initial state in which icon 41 is dragged within hatched area 45:
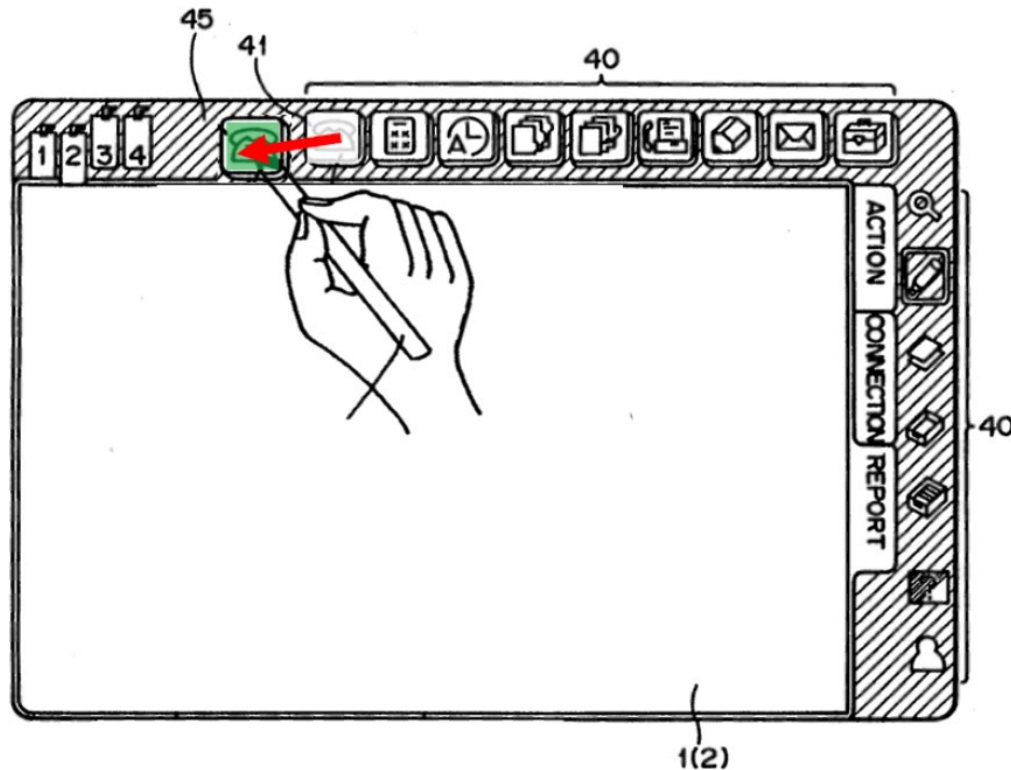
Ex. 2007 ¶ 74; PO Resp. 40. Modified Figure 3A, above, is similar to original Figure 3A except that it depicts a duplicate version of icon 41 (in green) moving with the tip of pen 3 in the direction of a red arrow to an intermediate position within hatched area 45. Ex. 2007 ¶ 74; PO Resp. 40. The modified figure also shows a greyed-out version of icon 41 at the original location.

In its Reply, Petitioner relies on Dr. Bederson to provide an alternative to Dr. Rosenberg's interpretation of Figures 3A and 3B in which icon 41

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remains at its original location during the dragging operation and instead, only cursor 42 accompanies the tip of pen 3 until the tip has moved a "large" amount, at which time window 43 immediately comes into existence under cursor 42. Pet. Reply 23–25 (citing Ex. 1051 ¶ 105–111). This is depicted in two annotated versions of Figure 3A provided by Dr. Bederson, reproduced below.
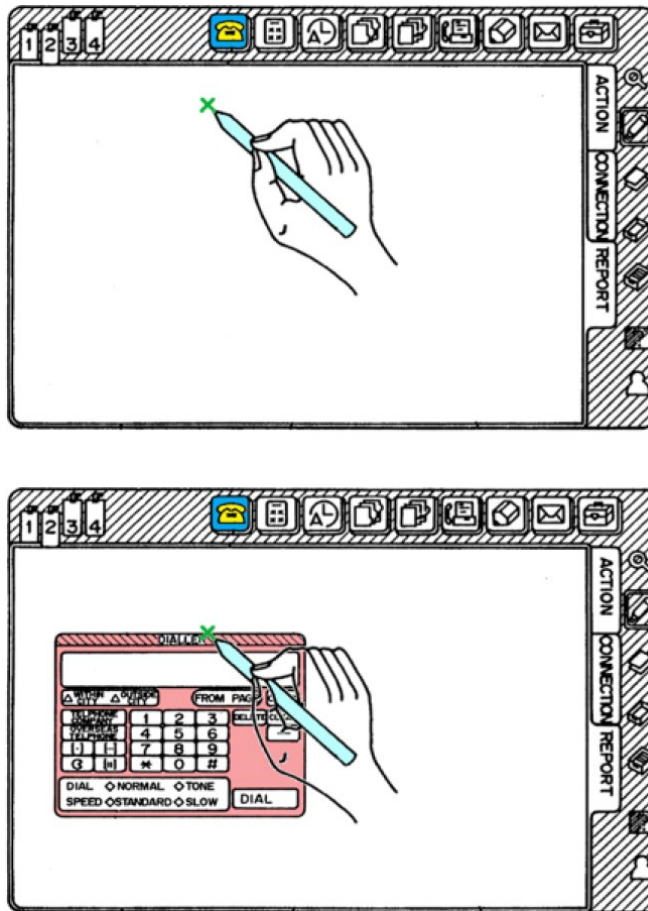
Ex. 1051 ¶ 105 (textual on the right captions omitted). In both images, icon 41 is highlighted in color and the tip of pen 3 has been dragged some distance from the original touch location over icon 41. In both images, cursor 42 (highlighted in green) has followed, and is under, the tip of pen 3. In the second image, pen 3 has been dragged slightly further than in the first

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image, and window 43 (highlighted in pink) has appeared underneath cursor 42.

Petitioner also argues that when window 43 is returned to icon group 40, Hirayama307 states that the user "drags the point of the pen 3 *back to the telephone icon 41*," suggesting that icon 41 remains at its original location. Pet. Reply 21–22 (quoting Ex. 1006, 6:22–31) (citing Ex. 1006, 8:34–45, 6:24–35; Ex. 1051 ¶¶ 97–98).

As we discuss above, the evidence suggests that Hirayama307's Figures 3A and 3B do not depict the dragging operations in full detail. *See supra* Section III.C.4(a)(2). Given the lack of an explicit disclosure of whether icon 41 is visually dragged during these operations, we find Dr. Rosenberg's interpretation of how a person of ordinary skill in the art would have interpreted the dragging process as shown in his proposed modifications to Figure 3A (shown above) to be at least as likely as that proposed by Dr. Bederson in his proposed modifications to Figure 3A (also shown above).

We also find persuasive Dr. Rosenberg's observation that Hirayama307 uses the word "enlarging" to describe the transition from icon 41 to enlarged icon/window 43, and that this choice of words suggests that window 43 is not just appearing at the cursor but that icon 41 is visually being enlarged at the cursor location. Ex. 2007 ¶ 78.

(5)   *Vacant Icon Position*

As evidence that a person of ordinary skill in the art would have understood that icon 41 is dragged along with the tip of pen 3, Neonode argues that in the reverse operation in which window 43 is closed by reducing it and returning it as icon 41 to icon group 40, "the open window is

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dragged and dropped 'to the predetermined *vacant* position,' referring to the position of the application icon corresponding to the window." PO Resp. 41 (quoting Ex. 2007 ¶ 75 (quoting Ex. 1006, 7:3–6, Fig. 4B step S10)); *see also* PO Sur-reply 24 (noting that the passage in Hirayama307 uses the definite article in referring to "*the* predetermined *vacant* position," which according to Neonode "confirm[s] that the original icon was moved during the prior drag-and-drop operation to open the window").

According to Dr. Rosenberg, "[t]his disclosure confirms that application icon 41 was 'relocated' when it was opened by the drag-and-drop operation as its location is now 'vacant.' The location would not be 'vacant' if the icon had not moved." Ex. 2007 ¶ 75. Dr. Rosenberg opines that, to a person of ordinary skill in the art, this would have been the common-sense interpretation of Hirayama307, since otherwise, "it may be challenging for the user to determine which specific one of the numerous application icons 40 corresponds to the currently open window" so that the user knows where to drag window 43 to close it. *Id.* ¶ 77; PO Resp. 41.

As further evidence that the original location of icon 41 becomes vacant after it is expanded into icon/window 43, Neonode refers to Hirayama878 (Ex. 1009), which Petitioner relies on for its arguments for claim 3 and acknowledges that it "has the same inventor and assignee as Hirayama307, and the figures present a similar user interface" (Pet. 70 (citing Ex. 1006, Figs. 3A–B; Ex. 1009, Figs. 5A, 5D)). According to Neonode, Hirayama878's Figures 5A and 5B clearly show that after an icon is moved from icon group 40, the original location of the icon becomes vacant. PO Resp. 45–56 (citing Ex. 1006, 7:4–6, Fig. 4B step ST10; Ex. 1009, Figs. 5A–B).

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In its Reply, Petitioner acknowledges that Hirayama878 "presents a similar user interface" to Hirayama307, but argues that Hirayama878 "is a different disclosure supporting a different system," and "there is no basis for assuming any of the teachings in Hirayama-878 about how to implement its icons rise to the high bar of a 'teaching away' (*e.g.*, nowhere does Hirayama-878 discourage alternative interface interpretations)." Pet. Reply 22.

We do not understand Neonode to be making a teaching-away argument. Rather, Neonode is arguing that we should consider Hirayama878's teachings about a vacant icon position for guidance in how to interpret the similar disclosure in Hirayama307, which is consistent with Petitioner's argument in the Petition that, "[g]iven the similarities of disclosure, a [person of ordinary skill in the art] would have looked to Hirayama878 for teachings on how to implement the window 43 and related functionality of Hirayama307." Pet. 72 (citing Ex. 1002 ¶ 172). We agree that Hirayama878 is relevant to how a person of ordinary skill in the art would have interpreted or implemented Hirayama307.

Petitioner also contends that Hirayama878 shows that the original icon is not deleted to make a vacant space in icon group 40 until after the entire gesture is complete and the user has lifted the pen off the surface, which does not suggest that the icon is dragged along with the pen tip. Pet. Reply 22 (citing Ex. 1009, 4:46–54, Fig. 5A; Ex. 1051 ¶ 99).

We disagree. Rather than deleting icon 54 at the *conclusion* of the dragging operation, Hirayama878 indicates that icon 54 is converted to enlarged shredder image 74 when the tip of stylus 3 is moved from the original touch location into an active area, which occurs while the pen is still touching the surface, as shown in Figure 5A. Ex. 1009, 4:47–55. The

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passage does not explicitly say whether icon 54 has, in the meantime, moved along with pen tip 3. *See id.*; *but see id.* at 7:8–14 (a similar but more explicit example in which an icon for a copying function "remains small in size in an area positioned [outside an active area]" and "[w]hen the tip of the stylus 3 is moved into an active area . . . as shown in FIG. 6B, the copying window is enlarged and displayed as a copy image 91 in an image frame 90").

In view of all the evidence, we regard Hirayama307's reference to a "vacant" icon position as at least mild evidence that Hirayama307's icon-activation process involves relocating or duplicating icon 41. The disclosure in Hirayama878 further supports this interpretation.

(6)   *Motivation to Modify Hirayama307*

Petitioner argues that Hirayama307 teaches a need to clearly and naturally determine the starting and ending of the dragging operation for icon 41. Pet. 61 (citing Ex. 1006, 7:10–24). Thus, according to Petitioner, a person of ordinary skill in the art would have had reason to use cursor 42 for that purpose rather than using a relocated or duplicated icon 41. Pet. 61–62 (citing Ex. 1002 ¶ 159).

In response, Neonode argues that Petitioner has failed to show any plausible motivation to modify Hirayama307 without relocating or duplicating icon 41 during the drag process. PO Resp. 46–50. Neonode points to Dr. Rosenberg's testimony that a person of ordinary skill in the art would have understood that "in graphical user interfaces, it is important to provide feedback to the user during an operation," which was "generally provided by visually showing the icon being moved or duplicated across the screen," as was "common in both the Microsoft Windows and Macintosh

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MacOS environments." *Id.* at 47 (quoting Ex. 2007 ¶¶ 83–84). Thus, "there simply is no reason for a [person of ordinary skill in the art] to implement Hirayama-307's drag-and-drop process, but avoid the industry-standard method of providing user feedback by 'relocating or duplicating' the icon during the drag-and-drop operation." *Id.* at 48 (quoting Ex. 2007 ¶ 85).

Relying further on Dr. Rosenberg's testimony, Neonode disagrees with Petitioner and Dr. Bederson that cross-shaped cursor 42 would have been considered sufficient to provide this user feedback, because Hirayama307 only teaches that cursor 42 "is used to assist the user in moving the pen to the location of the icon, just as a mouse cursor on a desktop display moves on the screen to assist the user in locating the mouse pointer." PO Resp. 49 (quoting Ex. 2007 ¶ 86). Moreover, according to Dr. Rosenberg, even if cursor 42 is also present during the dragging operation, "the appearance of the cross-shaped cursor does not denote to the user anything about the drag-and-drop operation, but simply that the pen is communicating with the screen, and the location of the tip of the pen." *Id.* (quoting Ex. 2007 ¶ 87). Thus, "the user would not know if the drag-and-drop operation is being successfully performed as the user drags the pen." *Id.*

In its Reply, Petitioner responds that "a cursor was a well-known way to provide a user with feedback as to the location of their finger or pen during a drag/glide movement," and that in Hirayama307, the cursor would have indicated where the user intends to open window 43 or return icon 41 to icon group 40, or whether the pen was close to the panel surface. Pet. Reply 16–17 (citing Ex. 1006, 6:22–31, 7:16–24, 7:58–8:3, Fig. 3B; Ex. 1012, 17, 19; Ex. 2007 ¶ 76; Ex. 1051 ¶¶ 75–78). And according to

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Petitioner, "[i]f the icon is dragged during gliding of the pen as Neonode suggests, there would be no reason to also display cursor 42." *Id.* at 17; *see also id.* at 21 (citing Ex. 1051 ¶ 96). Petitioner contends that a person of ordinary skill in the art would have understood that the use of a cursor, without dragging an icon, would provide sufficient feedback because it shows exactly where the point of pen 3 is during the movement. *Id.* at 22–25 (citing Ex. 1006, 4:66–5:3; Ex. 1012, 19; Ex. 1051 ¶¶ 100–111).

Petitioner also argues in its Reply[10] that, in comparison to showing a bare cursor, a person of ordinary skill in the art at the time of the claimed invention would have understood dragging an icon to be disadvantageous because such dragging "was computationally expensive at the time," and "would have likely produced a flickering of the icon due to the processing needed for continuous display of the icon at the different pen positions, leading to a poor user experience." Pet. Reply 25 (citing Ex. 1051 ¶¶ 107–112). And according to Petitioner, to the extent that any dragging of icon 41 must occur over hatched region 45 of Figure 3A, such dragging would occur over other icons and "would be confusing and visually undesirable," and would be unnecessary to show icon 41 dragging for just a few millimeters "[i]f the window 43 is displayed when the pen leaves the hatched area." *Id.* at 21 (citing Ex. 1051 ¶ 96). Petitioner also relies on Sears (Ex. 1012) for the teachings that there were numerous ways to provide feedback to a user, such

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[10] Neonode contends that these new motivation-to-combine arguments are untimely. PO Sur-reply 27. Because we find the arguments unpersuasive, we need not decide whether they are untimely under 37 C.F.R. § 42.23(b).

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as the use of flashing colors, and that it would have been obvious to use a cursor for feedback during dragging. Pet. Reply 22–23 (citing Ex. 2012, 19).

We find unpersuasive Petitioner's argument that a person of ordinary skill in the art would have considered Hirayama307's cursor 42 to provide sufficient feedback to the user during the dragging operation. First, we note that even in Petitioner's proposed modification to Figure 3A based on Dr. Bederson's testimony, the modified drawing continues to include *both* cursor 42 and window 43 after the expansion of icon 41 has taken place and window 43 is continuing to be dragged. *See* Pet. Reply 25; Ex. 1051 ¶ 103; *supra* Section III.C.4(a)(4). Thus, underlying this modification of Figure 3A is the recognition that a cursor and a representation of an item being dragged serve different purposes. The purpose of cursor 42, as Hirayama307 explains, is so that "the user can visually confirm the exact position of the point of pen 3 on the input tablet 2 very clearly." Ex. 1006, 5:1–3.

We also credit Dr. Rosenberg's testimony that although a cursor conveys the precise location of pen 3, a cursor, alone, would have failed to convey to a user that the dragging operation is being performed successfully, particularly since this was the industry-standard way to convey the idea of dragging an icon from one location to another. Ex. 2007 ¶¶ 83–87. We find this more credible than Dr. Bederson's testimony that an ordinarily skilled artisan would have considered a reproduction of icon 41 to be superfluous if cursor 42 was already present. Ex. 1051 ¶¶ 75–78, 104–106.

We do not find credible Dr. Bederson's testimony that visually dragging an icon would have been too computationally expensive at the time of the claimed invention. Ex. 1051 ¶ 107. This testimony is inconsistent with the disclosure in Hirayama307 that, in the reverse operation in which

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window 43 is reduced to window 41, a "reduce icon" 41 is visually dragged along with the pen tip. Ex. 1006, 6:66–67, Fig. 4B step ST8.

We also do not credit Dr. Bederson's testimony that a person of ordinary skill in the art would have been deterred from using a relocated or duplicated icon 41 as feedback during the dragging operation because it would be confusing, or because the distance the icon would move before being enlarged into icon/window 43 is relatively small. Ex. 1006 ¶ 96. Dr. Bederson's testimony on this point is conclusory and does not disclose any underlying factual basis. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."); *Apple Inc. v. MPH Technologies Oy*, 28 F.4th 254 (Fed. Cir. 2022) (The Board is free to reject expert testimony that lacks factual support).

Finally, we do not find persuasive Petitioner's reliance on Sears (Ex. 2012) in its Reply to show additional ways to provide feedback or to establish that it would have been obvious to use a cursor for feedback during dragging. Pet. Reply 22–23 (citing Ex. 2012, 19; Ex. 1051 ¶¶ 100–104). Petitioner cited Sears for other purposes in its Petition, so this is a new argument in the Reply. *See, e.g.*, Pet. 66, 68, 73 (citing Sears as evidence in the context of dependent claims 13, 14 and 16). Sears states that, when users can select a target area by "drag[ging] their fingers onto a target,"[11] "it is

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[11] Sears appears to be describing something similar to the "$a{\rightarrow}b{\rightarrow}c{\rightarrow}a$" variation of the *Slide Off* strategy taught in Ren. *Compare* Ex. 1012, 17 ("[T]he finger touch may produce a cursor that can be dragged across the screen, and activation occurs when the finger is lifted off the surface."), *with* Ex. 1004, 391 ("The target is highlighted only while the pen is in contact

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often advantageous to provide a cursor near the user's fingers showing exactly where a selection will be made if they lift their fingers" off the screen. Ex. 1012, 19. In other words, the "dragging" that Sears refers to occurs before selection of a fixed target when the user slides the finger onto the target and lifts the finger from the target. *Id.* However, Petitioner did not include Sears in its grounds of the Petition. Nor has Petitioner specifically explained, even in its Reply, how a person of ordinary skill in the art would have applied the teachings in Sears to the teachings in Hirayama307 and Ren. Thus, even if we were to accept Petitioner's argument about Sears as timely, it is not persuasive.

> (7)   *Conclusion as to Whether Hirayama307 Teaches Limitation 1d*

Having considered all the evidence of record about Petitioner's contention that Hirayama307 teaches limitation 1d, we do not find the evidence, as a whole, persuasive by a preponderance of the evidence.

> (b)   <u>Whether Hirayama307 Teaches Limitation 1d in Light of Ren</u>

Petitioner alternatively argues that Hirayama307 teaches limitation 1d in light of the teachings of Ren. Pet. 62. According to Petitioner, "Ren and Hirayama307 both are directed to solutions to the same problem, namely target selection techniques in pen-based tablet systems," and an ordinarily skilled artisan would have recognized that there are only small number of selection techniques in a pen-based graphical user interface, and would have

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with it; however, the selection is made when the pen is removed from any point on the screen . . . inside . . . the target area.").

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tried to implement Ren's selection strategies on Hirayama307's device with predictable results. *Id.* (citing Ex. 1002 ¶¶ 160–162); *see also* Pet. Reply 27–28 (clarifying that it is Ren's *Slide Off* gesture that a person of ordinary skill in the art would have incorporated into Harayama307's interface, and that it is the "sliding" part of Ren's *Slide Off* gesture that would correspond to the gliding portion of the gesture recited in claim 1).

We agree with Neonode that, while the argument in the Petition may establish that Hirayama307 and Ren are analogous references, Petitioner failed to specifically articulate how a person of ordinary skill in the art would have combined Ren's *Slide Off* or any other selection strategies with Hirayama307's user interface. *See* PO Resp. 53–54; *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) ("To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." (citing *KSR*, 550 U.S. at 418)). Also, as Neonode points out, Ren describes selection strategies, but the Petition does not clearly explain how an ordinarily skilled artisan would have applied teachings about the *selection* of a target area, such as by Ren's *Slide Off* gesture, to the dragging operation in Hirayama307. PO Sur-reply 29 (citing Ex. 1004, 1).

In its Reply, Petitioner argues for the first time that an ordinarily skilled artisan would have used Ren's *Slide Off* gesture to "designat[e] the position where the window 43 would be opened." Pet. Reply 27 (citing Ex. 1006, 5:1–12, 7:7–15). But Petitioner still does not explain how this belated argument relates to limitation 1d's requirement that there is no relocation or duplication of icon 41 during a gliding movement.

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Also, in support of its obvious-to-try argument, Petitioner does not direct us to any "design need or market pressure to solve a problem," or any particular reason that an ordinarily skilled artisan would have selected a particular strategy from Ren to produce the claimed invention. Pet. Reply 27; *see also In re Cyclobenzaprine Hydrochloride Extended–Release Capsule Patent Litig.*, 676 F.3d 1063, 1072 (Fed. Cir. 2012).

Thus, we find Petitioner's argument regarding the combination of Hirayama307 and Ren to be insufficiently specific to meet its burden of persuasion, and Petitioner did not remedy that deficiency in its Reply. *See* 35 U.S.C. § 322(a)(3) (requiring a petition to identify, "with particularity, . . . the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim").

(c)   Conclusion Regarding Limitation 1d

For the above reasons, we determine that Petitioner has not shown, by a preponderance of the evidence, that Hirayama307, either itself or in combination with Ren, teaches limitation 1d.

5.   *Objective Indicia of Non-obviousness*

Neonode argues that, as objective indicia of nonobviousness, we should consider evidence of industry praise, commercial success, and licensing of Neonode's N1 device and its later N2 iteration, released in 2007. PO Resp. 4–5. According to Neonode, the industry and at least one licensor recognized that the N1 and N2 phones had a unique user interface that allowed easy access to all the device's content through a small number of simple sweeping gestures. *Id.* at 5 (citing Ex. 2008 (promotional video)). Neonode contends that these gestures embodied the swipe-based user

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interface disclosed in the '879 patent and recited in the challenged claims. *Id.* at 5–6 (citing Ex. 1001, 1:49–61; Ex. 2023 ¶¶ 4–6; Ex. 2007 ¶¶ 40–41).

For us to give substantial weight to objective indicia of nonobviousness, a proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). "[T]here is no nexus unless the evidence presented is 'reasonably commensurate with the scope of the claims.'" *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)).

A patentee is entitled to a presumption of nexus "when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). As we discuss below, Neonode does not contend that it is entitled to a presumption of nexus. *See infra* Section III.C.5(a).

Even without the presumption, a proponent of objective indicia "is still afforded an opportunity to prove nexus by showing that the evidence of [objective indicia] is the 'direct result of the unique characteristics of the claimed invention.'" *Fox Factory*, 944 F.3d at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). The nexus must be "to some aspect of the claim not already in the prior art." *In re Kao*, 639 F.3d 1057, 1069 (Fed. Cir. 2011).

Once the patentee has presented a prima facie case of nexus, the burden shifts to the patent challenger "to adduce evidence to show that the [objective indicium] was due to extraneous factors other than the patented invention." *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d

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1387, 1393 (Fed. Cir. 1988). "Ultimately, the fact finder must weigh the
[objective indicia] evidence presented in the context of whether the claimed
invention as a whole would have been obvious to a skilled artisan." *See
Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 33 (PTAB
Jan. 24, 2020) (precedential) (citing *WBIP, LLC v. Kohler Co.*, 829 F.3d
1317, 1331–32 (Fed. Cir. 2016)).

For the reasons below, we find that evidence of industry praise and
licensing[12] have a nexus to challenged claim 1 and weigh significantly in
favor of nonobviousness.

(a)   The N1 and N2 phones

According to Joseph Shain, who testifies he is familiar with the N1
and N2 phones, the devices "presented three icons in a strip along the lower
edge of the display immediately following unlocking the phone." Ex. 2023
¶¶ 4, 6. He states that these three icons each "consisted of only one option
for activating the [icon's] associated function," such as to activate a start
menu, a keyboard, or a tools menu. *Id.* ¶ 6. He testifies that "[e]ach of the
icons were activatable by a gesture in which a thumb or finger touches the
icon, and swipes up toward the center of the screen before lifting off of the
screen. None of the icons were relocated or duplicated during the swiping
gesture." *Id.*

Mr. Shain also testifies that an advertising video, which Neonode has
submitted as Exhibit 2008, reflects the operation of the N2 phone and "was

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[12] In light of our other findings, we need not address Neonode's evidence of
commercial success.

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produced during the ordinary course of Neonode's business." Ex. 2023 ¶ 7.
We have reviewed this video and it describes a phone device with a user
interface consistent with Mr. Shain's description.

Also, Dr. Rosenberg testifies, based on his review of Exhibit 2008,
Mr. Shain's testimony, and other materials, that "the 'swipe' gesture of
Neonode's user interfaces in the N1 and N2 phones is covered by claim 1."
Ex. 2007 ¶ 40.

In its Reply, Petitioner argues that Neonode does not "analyze the
Neonode devices on a limitation-by-limitation basis." Pet. Reply 29 (citing
Ex. 1053, 119:17–120:1, 124:9–18, 134:9–17 (Dr. Rosenberg's cross-
examination testimony stating that he did not physically analyze an N1 or
N2 phone in preparing his testimony, although he considered at least the
video of Exhibit 2008)).

We disagree. Although Neonode did not provide a claim chart
comparing claim 1 with the N1 or N2 phones, Neonode cited to Mr. Shain's
testimony on this point. PO Resp. 5; *see also* PO Sur-reply 1–2. Under the
circumstances, Mr. Shain sufficiently compared the N1 and N2 devices to
each of the limitations of claim 1 within two short paragraphs. Ex. 2023
¶¶ 5–6. Also, Neonode does direct our attention to a portion of the video in
Exhibit 2008 and explains how the video demonstrates a gliding gesture on
the N2 device's user interface. PO Resp. 7–8.

Although Neonode should have provided a more complete
comparison between the N1 or N2 devices and claim 1 in its Response, the
Response was well under the applicable word-count limitations. *See* PO
Resp., Certificate of Compliance with Type-Volume Limits. Because Mr.
Shain's comparison is short, Neonode's reliance on that comparison, under

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the circumstances, does not circumvent Neonode's length limitations and does not constitute such a violation of 37 C.F.R. § 42.6(a)(3) that it would be appropriate for us to disregard his testimony.

Petitioner also contends that during the glide gesture performed on the N2 device, a representation of the function (an arrow) is duplicated during the gliding as depicted in a photograph that we reproduce below:

Pet. Reply 30–31 (citing Ex. 2013, 2; Ex. 1057, 151:20–152:14, 153:2–13). The above photograph appears to be a screenshot that Petitioner obtained from a Pen Computing Magazine review of the N2 phone (Ex. 2013, 2), which shows a thumb making a gliding gesture on a touch screen, and it also shows a series of arrows pointing in the direction of the gesture. According to Petitioner, limitation 1d "is not met because these arrows duplicate during the gliding motion." *Id.* at 31. Petitioner also argues that "[t]he N1/N2 devices also include icons printed on the device, *i.e.*, not displayed on the screen," which therefore could not be the "representation of the function" recited in claim 1. *Id.*

Neonode responds, and we agree, that the printed icons on the N2 device correspond to the "representation of the function" recited in limitation 1d because the icons are located within the touch-sensitive area of

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the screen. Claim 1 does not explicitly preclude the "representation of the function" from being printed on the touch-sensitive screen, and Petitioner has not pointed to any evidence to suggest otherwise. *See* PO Sur-reply 2–3. We also agree with Neonode that, based on the video of Exhibit 2008, these arrows appear during the initial touch (the first part of the recited multi-step gesture) rather than during the subsequent gliding part of the gesture, thus, to the extent that the arrows could be considered the "representation of the function," they are "not . . . duplicated during the gliding" part of the gesture as recited in limitation 1d. *See* PO Sur-reply 3–4.

Neonode does not argue that the N1 or N2 devices are coextensive with claim 1, and Neonode has not raised the question of whether its evidence of objective indicia of nonobviousness is entitled to presumption of nexus. *See* Pet. Reply 32 (arguing that the evidence is not entitled to a presumption of nexus). However, for the reasons below, we determine that there is a nexus between the evidence and the N1 or N2 phones, and that evidence weighs in favor of nonobviousness.

(b)   Industry Praise

Neonode argues that its N1 and N2 devices received wide praise in industry publications. PO Resp. 9. According to Neonode, Pen Computing Magazine called the user interface of the N1 phone "simple and brilliant," particularly because the swiping gestures "let you hold a phone in the palm of your hand and operate it entirely with your thumb," and contrasted other solutions that involved pushing buttons or pulling out a tiny stylus. *Id.*

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(emphasis omitted) (quoting Ex. 2012, 2–3[13]). It also described the N1
phone as "unique," and the user interface as "compelling" and "simpler than
pretty much anything else that comes to mind, and praised the interface's
speed. *Id.* at 9–10 (emphasis omitted) (quoting Ex. 2012, 5). Neonode points
to other articles praising the swipe-based user interface as being simple and
intuitive. Ex. 2014, 1; Ex. 2016, 1; Ex. 2021.

Neonode also points to testimony of Per Bystedt, who says he was
aware of industry buzz and read numerous articles praising the N1 device in
Swedish and international magazines after the device was demonstrated at
the CeBit trade show in Germany in the spring of 2002. PO Resp. 11; Ex.
2026 ¶ 3 (redacted version at Ex. 1049). Mr. Bystedt (who became an
investor and later a director and CEO of Neonode, *see* Ex. 2026 ¶ 7) also
testified that he had private interactions with senior leaders of Vodaphone
and Samsung, who praised the N1 device's user interface. PO Resp. 11–12
(citing Ex. 2026 ¶¶ 3, 8–9, 11–12).

In addition, Neonode points to later articles, around the introduction
of Apple's iPhone in 2007, making the case that swiping and tapping
elements of Apple's user interface were not original and had been introduced
earlier in Neonode's N1 phones. PO Resp. 12 (citing Ex. 2013, 1, 9; Ex.
2036 (a user-produced video); Ex. 2029 (video review of the Neonode N1m
(an iteration of the N1 released in 2005)); Ex. 2019 (an Ars Technical article

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[13] Petitioner objected to Exhibit 2012 and other exhibits we discuss below on
grounds including lack of authentication and hearsay. *See* Paper 38.
However, Petitioner has not filed a motion to exclude any evidence of record
in this proceeding. *See* 37 C.F.R. § 42.64(c) (objections to evidence may
only be preserved by filing a motion to exclude).

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comparing the N1m's swiping gestures to Apple's later "slide to unlock" gesture)). Neonode also points to a 2019 Ph.D. dissertation that identified the N1 as "the first smartphone to use a touchscreen as primary input and to support touch gestures for several functions," *id.* at 14 (emphasis omitted) (citing Ex. 2018, 9), and a 2015 dissertation describing the N1 as "the first mobile to use swipe gestures" and "to make extensive use of swipe gestures appropriate for one-handed use" (*id.* at 14–15 (emphasis omitted) (citing Ex. 2020, 8 & Fig. 3)). Neonode also points to user posts praising the swiping features of the interface. *Id.* at 16–17 (citing Exs. 2030–2032).

In its Reply, Petitioner argues that the "alleged praise stemming from the 2002 CeBit demonstration should be disregarded" because, based on testimony from Thomas Eriksson who had knowledge about Neonode's demonstration of the device at the conference, "[t]he demonstrated device did not have a working touch interface and did not practice the '879 patent." Pet. Reply 31 (citing Ex. 1058, 66:10–15, 105:10–106:11 (testifying that the N1 prototype displayed at CeBit was not fully functional); Ex. 1051 ¶ 137).

We disagree that this evidence should be entirely disregarded because, as Neonode points out in its Sur-reply, "Petitioner disregards the witness's testimony that the prototype had 'a display' and 'a moving video showing different things you could do with the device.'" PO Sur-reply 6 (citing Ex. 1058, 105:15–18, 107:3–6). Nevertheless, we give that evidence little weight because (1) Mr. Eriksson was unable to recall whether the N1 prototype displayed at CeBit had swiping gestures, although development of such gestures had begun before the conference (Ex. 1058, 105:22–108:6); and (2) Mr. Bystedt's testimony that there was praise specifically related to

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the CeBit conference is not supported by citations to corroborating evidence on the record (*see* Ex. 2026 ¶ 3).

Petitioner also argues that Magnus Goertz, the inventor, "admitted the claimed gesture-based interface was not new." Pet. Reply 32 (citing Ex. 1057, 37:2–13, 18:9–17; Ex. 1051 ¶ 138). We agree with Neonode that this misrepresents his testimony because he was simply stating that other devices had touch screens and that a prior device had a stylus-based sliding gesture for "reverse texting." PO Sur-reply 6 (citing Ex. 1057, 18:7–17, 37:2–13).

Next, Petitioner argues that Mr. Bystedt's cross-examination testimony contradicts Mr. Eriksson's declaratory testimony that Samsung's upper management praised the N1 device, because Mr. Eriksson did not recall the same statements, and during the discussions in which Mr. Bystedt says he heard the statements, "[t]he Samsung contingent spoke amongst themselves in Korean." Pet. Reply 32 (citing Ex. 1058, 74:12–14, 75:4–14).[14] We agree with Neonode that the testimony is not contradictory. PO Sur-reply 4. Although Mr. Eriksson did not recall hearing the same things in English that Mr. Bystedt says he heard during these discussions with Samsung, Mr. Eriksson did testify that a senior Samsung representative patted him on the back and said, "good work." Ex. 1058, 73:24–14, 75:15–76:2. Thus, both Messrs. Bystedt and Eriksson testify that Samsung

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[14] Petitioner also argues that Mr. Bystedt's testimony is hearsay. Pet. Reply 32. Neonode characterizes the evidence as a party admission offered to show the speaker's state of mind. PO Sur-reply 4. Because Petitioner has not preserved its hearsay objection by a motion to exclude, we do not need to decide this issue. *See supra* note 13.

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representatives praised Neonode's technology during the discussions, and Mr. Bystedt specifically tied the praise to the phone's "intuitive user interface." Ex. 2026 ¶ 9. Also, as Neonode points out, Samsung licensed Neonode's technology soon after the discussions. PO Sur-reply 4.

Finally, Petitioner argues that Neonode's evidence of industry praise has no nexus with limitation 1d. Pet. Reply 30. In particular, Petitioner argues that Neonode's evidence "relies on praise for prior art and unclaimed features" such as the absence of a physical keypad or keyboard, and Neonode's zForce optical sensing technology. Pet. Reply 32 (citing Ex. 2012, 2; Ex. 1051 ¶ 138); *see also id.* at 30 (citing Ex. 1001, 6:14–16, 6:45–59 (claim 1); Ex. 1053, 23:19–21; Ex. 1051 ¶¶ 131–132). According to Petitioner, zForce technology "was the subject of a different patent application and not mentioned in the challenged claims." *Id.* (citing *Samsung Electronics Co. v. Neonode Smartphone LLC*, IPR2021-00145, Paper 68 at 45 (PTAB June 15, 2022)).

We find these arguments unpersuasive. Although some of the industry praise was directed to these other features such as zForce, the evidence we have outlined above also clearly includes substantial industry praise of the N1 or N2 phone's swiping gestures that are the subject of claim 1.

Although a nexus must be "to some aspect of the claim *not already in the prior art.*" *Kao*, 639 F.3d at 1069 (emphasis added), there is no requirement that "objective evidence must be tied exclusively to claim elements that are not disclosed in a particular prior art reference in order for that evidence to carry substantial weight." *WBIP*, 829 F.3d at 1331. A patent owner may show, for example, "that it is the claimed combination as a whole that serves as a nexus for the objective evidence; proof of nexus is not

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limited to only when objective evidence is tied to the supposedly 'new' feature(s)." *Id.* at 1330. Thus, although our § 103 analysis focuses primarily on limitation 1d, we need not limit the scope of our inquiry only to industry praise of limitation 1d alone, when the evidence suggests that limitation 1d is part of what would have made the recited swiping gesture, as a whole, nonobvious over the asserted prior art.

Neonode's evidence of industry praise is directed largely to the user interface's swiping gestures, which allowed a user to control the device in an intuitive way using just a thumb. *See, e.g.*, Ex. 2008; Ex. 1012, 2–3; Ex. 2021, 2; Ex. 2013, 1; Ex. 2020, 8. That the gestures do not relocate or duplicate representation of the function during the swiping operation, as per limitation 1d, is part of what distinguishes the swiping gestures as a whole from "drag-and-drop" gestures in the prior art, because with a swiping gesture that includes limitation 1d, the user can control the device without the complexity of dragging an item or dropping it to a particular destination on the screen. *See* PO Resp. 29–30 (quoting Ex. 2007 ¶ 65 (testifying that "[i]n the field of human computer interaction, even small differences between gestures can have substantial consequences," and "[i]t is most unlikely that Neonode's phones would have received such praise if they replaced their seamless gliding functionality with a cumbersome drag-and-drop operation as shown in Hirayama-307")); Ex. 1003, 170–171 (applicant during prosecution distinguishing the swiping gesture from a "drag-and-drop operation for moving an icon" known in the prior art); Ex. 2007 ¶ 65.

Thus, we find that Neonode has shown evidence of industry praise, and that praise has a substantial nexus to the swiping gesture of claim 1 as a whole, of which limitation 1d is a significant part.

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(c)   Licensing

Neonode argues that the fact Samsung entered a license agreement on July 2005 for the technology associated with the N1 and N2 phones is objective evidence of nonobviousness. PO Resp. 17–18 (citing Ex. 2028 (license agreement)).

In response, Petitioner argues that Neonode has failed to show a nexus between the Samsung license agreement and the challenged claims because the agreement "covers multiple patent applications and other technology" such as zForce. Pet. Reply 33. Also, Petitioner argues that the challenged claims did not exist when Samsung entered its agreement with Neonode. *Id.* (citing Ex. 1052, 202, 257).

Neonode responds that this "was not a license to a bundled product or hundreds of applications. Rather, the license concerned two specifically identified applications, the zForce application (concerning the light beam controlled touch-screen) and the '879's application [No. 10/315,250] (concerning the software for interaction with the operating system." PO Sur-reply 5 (citing Ex. 2028, 1–2; *id.* at 2 (referring to "Neno" as the technology disclosed in the '879 patent)). According to Neonode, "Samsung was clearly interested in both zForce and Neno and, indeed, licensed Neonode's technology exclusively" and without being "prompted by a threat of litigation, a prior business relationship or other economic reason that might discount Samsung's undeniable interest in exclusively licensing the technology." *Id.* at 5–6 (citing Ex. 2028, 4).

Although Samsung would not have known the precise scope of claim 1 when it issued, Samsung would have been aware of the overall technology that the application encompassed, including the disclosed swiping gestures.

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Moreover, as we discuss above in the context of industry praise, there is evidence that at least some of Samsung's interest in taking a license related to the intuitive, swipe-based gestures. *See supra* Section III.C.5(b); Ex. 2026 ¶ 9. We find that the evidence of record suggests a nexus between the allegedly unique features of claim 1 and the Samsung–Neonode license agreement, and the evidence weighs in favor of nonobviousness.

6. *Conclusion as to claim 1*

As discussed above, the evidence of record supporting Petitioner's argument that Hirayama307 teaches limitation 1d is mixed but does not, on balance, show that a person of ordinary skill in the art would have had reason to include limitation 1d, and the addition of Ren's teachings does not alter that assessment. Also, the evidence of objective indicia weighs in favor of nonobviousness. Considering the *Graham* factors as a whole, which weigh in favor of nonobviousness, we determine that Petitioner has not shown, by a preponderance of the evidence, that claim 1 is unpatentable under § 103 as obvious over the combination of Hirayama307 and Ren.

D.   CHALLENGE TO DEPENDENT CLAIMS 2–6 AND 12–17

As part of its first ground, Petitioner argues that dependent claims 2, 4, 5, and 14–17 are unpatentable under § 103(a) as obvious over Hirayama307 in view of Ren. Pet. 63–70. Petitioner also challenges claims 3, 6, 12, and 13 on other grounds based on the combination of Hirayama307 with either (a) Ren and Hirayama878 (claim 3), (b) Ren and Allard (claims 6 and 13), or (c) Henckel (claim 12). Pet. 70–74.

The remaining challenged claims depend from claim 1, and Petitioner's arguments regarding those claims address the specific

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limitations added to claim 1 without specifically revisiting the issues we discuss above as to limitation 1d. *See* Pet. 63–74. Although Petitioner addresses specific issues about claims 6 and 15 in its Reply, Petitioner does not otherwise raise arguments that would alter our analysis of claim 1. *See* Pet. Reply 28–29.

Thus, we determine that Petitioner has not shown, by a preponderance of the evidence, that any of claims 2–6 or 12–17 are unpatentable under § 103(a) as obvious over the respective prior art combinations.

IV. CONCLUSION

For the reasons above, Petitioner has not shown by a preponderance of the evidence that any challenged claim of the '879 patent is unpatentable under any ground of the Petition.

V. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–6 and 12–17 of the '879 patent have not been shown to be unpatentable;

FURTHER ORDERED that the parties may, within 10 business days of the entry of this decision, file a joint motion to seal this decision, which must include, as an exhibit, a proposed redacted public version of this decision that will be open to the public, and in the absence of such motion, this decision will be made open to the public; and

FURTHER ORDERED that parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 14–17	103(a)	Ren, Tanaka[15]		
2–5	103(a)	Ren, Tanaka, Hirayama307		
3	103(a)	Ren, Tanaka, Hirayama307 Hirayama878		
6, 13	103(a)	Ren, Tanaka, Allard		
12	103(a)	Ren, Tanaka, Henckel		
1, 2, 4, 5, 14–17	103(a)	Hirayama307, Ren		1, 2, 4, 5, 14–17
3	103(a)	Hirayama307, Ren, Hirayama878		3
6, 13	103(a)	Hirayama307, Ren, Allard		6, 13
12	103(a)	Hirayama307, Henckel		12
1, 14, 15	103(a)	Jermyn		
Overall Outcome				1–6, 12–17

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[15] The grounds based primarily on Ren and Jermyn have been withdrawn and we do not reach these grounds. *See* Paper 50.

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